

CLAIMS

What is claimed is:

1 1. A method for picking a media sheet from a media stack,
2 comprising the steps of:
3 rotating a pick roller in contact with a media sheet;
4 during the step of rotating, hinging a pick arm which supports the pick
5 roller, the pick arm having a proximal portion located proximal to a pivot
6 point and a distal portion located distal to the pivot point, and the pick arm
7 hinging the distal portion relative to the proximal portion at the hinge point,
8 the pick roller located along the distal portion;
9 picking the media sheet by advancing the media sheet away from the
10 media stack under a force attributable to at least the pick roller; and
11 limiting to a maximum angle, an angle which the distal portion of the
12 pivot arm forms relative to the media stack while the pick roller maintains
13 contact with the media stack, wherein said limiting is achieved using a stop
14 mechanism.

1 2. The method of claim 1, further comprising the step of:
2 inducing a moment on the pick arm, the moment being in response to
3 the rotation of the pick roller while in contact with the media sheet, said
4 hinging of the pick arm occurring at the hinge point in response to the
5 induced moment.

1 3. The method of claim 2, further comprising the step of pivoting
2 the pick arm about the pivot point in response to the induced moment.

1 4. The method of claim 3, further comprising the step of:
2 blocking the pivoting of the pick arm about the pivot point in a first
3 direction with a stop mechanism.

1 5. The method of claim 4, further comprising the step of:
2 stopping the hinging of the pivot arm with another stop mechanism to
3 limit an angle formed between the distal portion and the proximal portion to a
4 minimum angle.

1 6. An apparatus for picking a media sheet from a media stack,
2 comprising:
3 a pick arm having a proximal portion and a distal portion, the distal
4 portion connected to the proximal portion at a hinge point, the distal portion
5 hinging relative to the proximal portion at the hinge point, the pick arm being
6 anchored at a pivot point along the proximal portion away from the hinge
7 point, the pick arm rotating relative to the pivot point;
8 a pick roller coupled to the distal portion away from the hinge point;
9 and
10 a drive motor for rotating the pick roller, wherein during a pick
11 operation the drive motor rotates the pick roller while the pick roller is in
12 contact with the media sheet to move the media sheet away from the media
13 stack;
14 a separation ramp onto which the media sheet is moved during the
15 pick operation; and
16 means for limiting an angle formed between the distal portion and the
17 media stack, while the pick roller maintains contact with the media stack, to
18 a maximum angle to limit a distance between the pick roller and the
19 separation ramp.

1 7. The apparatus of claim 6, further comprising:
2 means for inducing a moment on the pick arm which causes the distal
3 portion to hinge relative to the proximal portion while the drive motor rotates
4 the pick roller allowing for effective picking of the media sheet from the
5 media stack.

1 8. The apparatus of claim 6, further comprising:
2 means for forcing the distal portion to hinge relative to the proximal
3 portion while the drive motor rotates the pick roller, allowing for picking of
4 the media sheet from the media stack.

1 9. The apparatus of claim 6, further comprising:
2 means for inducing a moment on the pick arm which causes the
3 proximal portion to pivot relative to the pivot point.

1 10. The apparatus of claim 6, further comprising:
2 means for limiting rotation of the pick arm about the pivot point.

1 11. The apparatus of claim 6, further comprising:
2 means for limiting the hinging of the distal portion about the hinge
3 point relative to the proximal portion to a minimum angle between the
4 proximal portion and the distal portion to limit a distance between the pick
5 roller and the separation ramp, while the pick roller maintains contact with
6 the media stack.

1 12. A print recording system for recording print onto a media sheet
2 which is picked from a media stack, the system comprising:
3 a print recording source;
4 a pick arm having a proximal portion and a distal portion, the distal
5 portion connected to the proximal portion at a hinge point, the distal portion
6 hinging relative to the proximal portion at the hinge point, the pick arm being
7 anchored at a pivot point along the proximal portion away from the hinge
8 point, the pick arm rotating relative to the pivot point;
9 a pick roller coupled to the distal portion away from the hinge point;
10 and
11 a drive motor for rotating the pick roller;

1 wherein during a print operation, the drive motor rotates the pick roller
2 while the pick roller is in contact with the media sheet to move the media
3 sheet away from the media stack onto a feed path to receive print recording.

1 13. The system of claim 12, further comprising:
2 means for inducing a moment on the pick arm which causes the
3 proximal portion to pivot relative to the pivot point and causes the distal
4 portion to hinge relative to hinge point while the drive motor rotates the pick
5 roller allowing for effective picking of the media sheet from the media stack.

1 14. The system of claim 13, in which the distal portion is spring-
2 biased into a first orientation relative to the proximal portion about the hinge
3 point, wherein the inducing means overcomes the spring-biasing to move the
4 distal portion into a second orientation relative to the proximal portion during
5 a picking portion of the print operation.

1 15. The system of claim 14, further comprising:
2 a separation ramp onto which the media sheet is moved during the
3 pick portion of the print operation;
4 means for limiting the hinging of the distal portion about the hinge
5 point relative to the proximal portion to a minimum angle between the
6 proximal portion and the distal portion to limit a distance between the pick
7 roller and the separation ramp.

1 16. The system of claim 14, further comprising:
2 a separation ramp onto which the media sheet is moved during the
3 pick portion of the print operation;
4 means for limiting an angle formed between the distal portion and the
5 media stack to a maximum angle to limit a distance between the pick roller
6 and the separation ramp.